From Medscape Medical News

Cases of Novel Swine Influenza Surging

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Authors and Disclosures

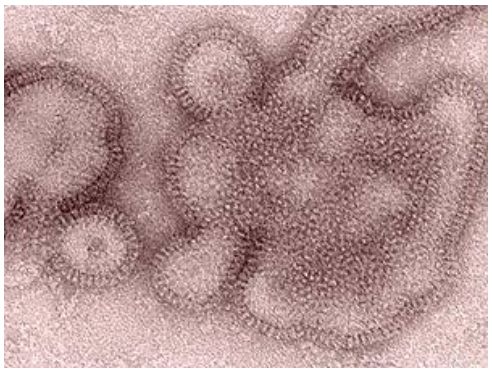
August 3, 2012 — The number of individuals sickened by a novel swine influenza virus since July 2011 has surged to 29, with 12 new cases reported this week, the US Centers for Disease Control and Prevention (CDC) announced today.

Direct or indirect contact with pigs explains how most of the 29 individuals, predominantly children, caught the virus. However, the CDC has identified a few cases of human-to-human transmission, and the agency is closely monitoring the virus to see whether it mutates into a version more easily spread among humans. A study published online in the *Proceedings of the National Academy of Sciences* in February reported that the virus has "pandemic potential" among humans.

Just in case, the agency has developed a pilot vaccine against the novel virus that is scheduled for clinical trials later this year, CDC epidemiologist Joseph Bresee, MD, said in a press briefing today.

Of the 12 swine influenza cases from this week, 10 involved patients who had been exposed to pigs at a county fair in Butler County, Ohio, 1 involved a patient had been exposed to swine at a county fair in Indiana, and 1 involved a farmer in Hawaii who worked with pigs. None of the 12 patients were hospitalized.

These 12 cases number among 16 reported during the last 3 weeks.



Influenza A(H3N2)v

"We want to understand why we're seeing more cases than we have in the past," said Dr. Bresee. Possible explanations include a change in the virus' genetic makeup, more human interaction with sick pigs during summer county fairs, or simply an intensified effort by public health authorities to look for this virus.

The virus could be circulating among humans more widely than the reported cases suggest, Dr. Bresee noted. "If you have 16 cases in the last 3 weeks, you probably have more cases that weren't reported.

"We expect that additional cases will be identified," he added. "We also expect some of the cases might be severe."

Novel Swine Influenza Has Gene From Human Pandemic Virus

The novel swine influenza virus leaves patients as sick as if they had caught the seasonal influenza virus. "Based on clinical symptoms alone, it's difficult or impossible to tell them apart," said Dr. Bresee. Accordingly, clinicians need to have a specimen tested by the CDC or a state health department to make the call.

All of the 29 patients infected since last year recovered. Only 3 required hospitalization, and they had underlying high-risk conditions.

Adults may have some preexisting immunity to the novel virus, which has hit children the hardest, Dr. Bresee said.

The novel swine influenza virus is designated A(H3N2)v, with the "v" standing for variant. What produces the variance is an "M" gene from the pandemic 2009 influenza A(H1N1) virus among humans that codes for matrix

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proteins in the viral shell. Experts say that the pandemic virus has found its way into the nation's pig herds, leading to the alteration of the A(H3N2) virus that circulates among these animals.

Dr. Bresee said the M gene from the human pandemic virus is related to viral replication and release, and its presence in the swine influenza A(H3N2)v virus "may confer human transferability."

There also is an A(H3N2) virus that normally circulates among humans, and this year's seasonal influenza vaccine, as in past years, is formulated to guard against it. However, Dr. Bresee said that the swine influenza A(H3N2)v virus is different enough from the human kind to make it impervious to the seasonal vaccine — hence the need to develop a separate vaccine.

In the meantime, the CDC is advising individuals who may get up close and personal with pigs at county fairs and farms to take precautions, which include:

- washing hands with soap and water before and after exposure to swine,
- never eating or drinking in swine areas, and
- avoiding close contact with swine that appear to be sick.

In addition, because they are at higher risk from serious complications of influenza, children younger than 5 years, adults aged 65 years and older, pregnant women, and people with certain chronic illnesses such as asthma or heart disease should consider avoiding pigs altogether.

Dr. Bresee said he expects that the antivirals oseltamivir (*Tamiflu*, Genentech) and zanamivir (*Relenza*, GlaxoSmithKline), which are prescribed for seasonal influenza, also will effectively treat A(H3N2)v influenza.

More information about the swine influenza A(H3N2)v virus is available on the CDC's Web site.

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